The Logistics Architecture: Our Sandtable for Logistics Modernization

by Keith Rineaman & Col Robert Ruark

A thorough analysis of logistics processes and the development of an operational architecture was critical to logistics modernization.

In the August 2003 issue of *Marine Corps Gazette*, LtGen Richard L. Kelly listed his priorities for modernizing Marine air-ground task force (MAGTF) logistics.[1] At the top of his list was fielding a collaborative logistics information technology (IT) suite that is built on a world-class operational architecture. We will expand on that article by describing what the operational architecture is and its significance to our logistics modernization effort.

In 1999 the Assistant Commandant of the Marine Corps approved several actions to modernize logistics. During that time the leadership made a crucial decision to thoroughly define how we want to conduct logistics functions *before* acquiring any new software or technology. This seems like a "no brainer" today, but in the last half of the 1990s, organizations all over the globe were leaping at technology solutions without first understanding the process problems they were trying to solve. In our case we knew we needed to fix our antiquated logistics systems, but we also knew that it wasn't as simple as just replacing asset tracking logistics and supply system, supported activities supply system, and Marine Corps integrated material management system. We needed to define how we would conduct critical logistics process functions in the future and then acquire the IT needed to meet that requirement. The product of that effort is the Marine Corps logistics operational architecture (LogOA).

The Winchester House and System Development

The need to develop an OA before acquiring new software is best illustrated by Dr. Steven H. Spewak in his book, *Enterprise Architecture Planning.*[2] Dr. Spewak compares most large organizations' approach to acquiring IT

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software to the Winchester House in San Jose, CA. The Winchester House is a mansion built by Sarah Winchester, who inherited a large fortune from her husband's rifle company. The house started as an eight-room farmhouse, but construction went on continuously for almost 38 years. Wings, towers, and rooms were built and remodeled without the benefit of an architectural plan. The result of Mrs. Winchester's effort is a 7-story mansion with 160 rooms, 2 basements, and odd features, such as stairways that rise into ceilings, doors and windows blocked by walls, more passageways than rooms, many rooms serving the same purpose, and 3 different technologies for heating the house (steam, forced air, and fireplaces).

The Winchester House reflects the challenge that many organizations have in implementing software solutions without an overarching functional architecture. The end result looks much like Mrs. Winchester's home.

Can this happen to the Marine Corps? It did to the logistics community. Over the years we acquired over

240 logistics systems. Most of these systems were state of the art at one time but now have outdated technologies, redundant capabilities, and incompatible data, with the majority never designed to be interoperable. They ended up this way because we managed our logistics systems independently rather than as a portfolio of related systems implemented within the framework of an OA. The 1st Marine Division Assistant Chief of Staff, G–4 (Logistics) said it best in his article on logistics support during Operation IRAQI FREEDOM (OIF):

> In computer systems alone, there are multiple, incompatible systems; I MEF [I Marine Expeditionary Force] uses supported activities supply system (SASSY) and asset tracking logistics and supply system (ATLASS); II MEF uses ATLASS II; Blount Island Command uses a commercial supply system for maritime prepositioning force equipment. . . . The supply system architecture planned for use during OIF was a 'workaround' combination of systems and methods . . . that never permitted visibility at the battalion or division level of a requisition from inception to receipt. Problems were directly attributable to the incompatibility of these systems, lack of training in their use, lack of a standard method of passing supply requisitions from MEF units through an MLC [Marine Logistics Command], and lack of a dedicated logistics communications architecture.[3]

To keep this problem from happening again, we built the LogOA to

fully define the key logistics functions that will serve as the foundation of our new "house" before we acquire software for Global Combat Support System-Marine Corps (GCSS–MC).

The Significance of the Marine Corps LogOA

Development of the LogOA greatly improves our ability to field new logistics systems. This is significant because in the future all IT funding will be based on the system's compliance with the Department of Defense's (DoD's) enterprise architecture. Failure to demonstrate this linkage is a huge risk, and any program that can't demonstrate it will suffer funding approval. The Marine Corps LogOA is built using the DoD's standards, and the Supply Chain Operational Reference (SCOR) Model,[4] a widely accepted industry systems development model. The benefit of using the SCOR Model is that it provides well-established standard measures of effectiveness (metrics) to benchmark against the best private sector logistics organizations in the world. Most importantly, the LogOA establishes critical warfighting relationships, reduces combat service support (CSS) complexity for supported units, and establishes enduring relationships with the CSS element for logistics support. That means the same relationships will become habitual in nature and sustained, regardless of a garrison or deployed environment. It's worth noting that this does not imply centralized logistics but aligns direct support and general support relationships from the perspective of the battlefield.

Our Sandtable for Logistics Modernization

Just as unit commanders use sandtables to help communicate the plan and scheme of maneuver for tactical operations, the LogOA allows us to articulate where our logistics modernization is going and how we plan to get there by providing a framework to articulate future requirements for doctrine, policy, education, force structure, and organization. Our LogOA sandtable work gives us the conceptual framework to define relationships and new capabilities. On the battlefield, CSS units will be able to immediately report to their supported units what CSS resources they possess, what their capabilities are (e.g., ammunition, repair parts, water, recovery support), and what the logistics chain directly behind them can support. We've never had this capability or level of visibility before. It will give us the ability to effectively position our logistics resources on the battlefield and synchronize CSS with maneuver to more responsively meet the MAGTF commander's intent.

The LogOA is key to institutionalizing logistics modernization. Current modernization initiatives (realignment of maintenance, realignment of supply functions, end-to-end distribution) and future initiatives (logistics education, CSS element organizational changes, logistics capability needs) will be based on the underpinnings of the LogOA to ensure they support more effective MAGTF logistics support. The LogOA is really the bedrock for all future logistics modernization affecting people (education), process changes (logistics procedures), and technology (IT systems). As stated earlier, it's the sandtable that will be used to ensure a successful doctrine, organization, training/education, materiel, leadership, personnel, and facilities analysis to align logistics with expeditionary maneuver warfare. Exposing the LogOA to the expeditionary force development system (EFDS) is a must for institutionalizing our logistics modernization.

Pressing Ahead

The LogOA won't be implemented overnight. There is still work to do. In order to determine the ultimate impact, we need to expose the LogOA to the EFDS, aggressively field GCSS-MC, and exercise these new capabilities in an operational environment. The LogOA will be presented to the Director, Expeditionary Force Development Center during this fiscal year to begin serving as the baseline for logistics modernization. Additionally, the LogOA is not, and cannot be, a "cookie cutter" approach. It establishes the functional foundation for GCSS-MC, but the actual end state on logistics modernization depends on how the MAGTFs' substantial logistics capabilities and resources are aligned to their mission, operation plans, and geography.

Hopefully, this article provides an understanding of what the LogOA is and how we're using it to improve the logistics support to the MAGTF. For logistics it's all about creating warfighting excellence and improving MAGTF lethality. We can't do this by conducting business as usual. We must change to improve, but it won't be easy. Simultaneously modernizing processes, organizations, and IT is the most challenging, risky, and complex thing any large organization can do. The good news is that we've done our homework. Just as the Winchester House analogy described so clearly, the LogOA reduces the risk and complexity for logistics modernization and provides the blueprints we need to move forward.

Notes
1. Kelly, LtGen Richard L., "Excellence in Logistics Supporting Excellence in Warfighting," *Marine Corps Gazette*, August 2003.

2. Spewak, Steven H., *Enterprise Architecture Planning: Developing a Blueprint for Data, Applications and Technology*, John Wiley and Sons, Inc., New York, 1992.

3. Broadmeadow, LtCol John J., "Logistics Support to 1st Marine Division During Operation IRAQI FREEDOM," *Marine Corps Gazette*, August 2003, pp. 44–5.

4. For more information on the SCOR Model, see <http://www.supply-chain.org>.

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